IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: YU et al.

Application Number: Not yet assigned   Group Art Unit: Not yet assigned

Filed: herewith   Examiner: Not yet assigned

Title: Tumor Necrosis Factor-Gamma   Attny. Docket No. PF141P7

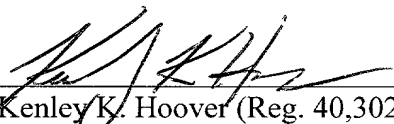## Statement Under 37 C.F.R. § 1.821(f)

Commissioner for Patents
Washington, D.C. 20231

Sir:

     Applicants hereby certify that the enclosed paper copy of the sequence listing and the computer-readable form of such sequence listing are identical.

Respectfully submitted

Date: July 6, 2001

Kenley K. Hoover (Reg. 40,302)
Attorney for Applicants

Human Genome Sciences, Inc.
9410 Key West Avenue
Rockville, MD 20850
(301) 610-5771 (telephone)

July 6, 2001

KKH/MS:cmp

SEQUENCE LISTING

<110> Yu, Guo-Liang
      Ni, Jian
      Rosen, Craig A.
      Zhang, Jun

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65   70   75   80

Thr Asp Leu Ser Pro Gly Leu Pro Ala Ala His Leu Ile Gly Ala Pro
                85   90   95

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        115   120   125

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Leu Leu Leu Glu Gly Ala Glu Thr Val Thr Pro Val Leu Asp Pro Ala
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```
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<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (311)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (387)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (409)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (425)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (427)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (453)
<223> n equals to a, t, g, or c

<400> 11
ggcacagcng gnagtagggg gcattccaca gggacaacgg tttagctatg aaatttgggg 60

cccaaaattt cacacttcat gtgccttact gatgagagta ctaactggaa aaaggctgna 120

agagagcaaa tatattatta agatgggttg gaggattggc gagtttctaa atattaagac 180

actggatcac tgaaatgaat ggatgatcta ctcgggtcca ggattgaaag agaaatattt 240

caacaccttc ctgctataca atggtcacca gtggtccagt tattgttcca atttggatcc 300

atnaatttgc nttcaattcc aggagctttg gaaggaattc caaggaaagc tccaggaaaa 360

ccgtattaaa ctttccaggg gccaaantcc ttcaccaatt ttttccacna actttccagg 420
                                                                   458
cctgncncaa aaaaatggaa agggagttgg tangtccc

<210> 12
<211> 388
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (11)..(12)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (46)
<223> n equals to a, t, g, or c
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<220>
<221> misc_feature
<222> (50)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (81)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (138)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (155)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (182)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (188)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (269)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (317)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (322)
<223> n equals to a, t, g, or c

<220>
<221> misc_difference
<222> (358)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (363)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (375)
<223> n equals to a, t, g, or c

<400> 12
ctgcactggg nncatgaact aggcctggcc ttcaccaaga accgantgan ctataccaac 60

aaattcctgc tgatcccaga ntcgggagac tacttcattt actcccaggt cacattccgt 120

gggaatgaac ctctgaantg ccagtgaaaa tcagncaagc aggccgacca aacaagccag 180

antccatnca ctgtggtcat caccaaggta acagacagct accctgagcc aacccagctc 240

cttcatggggg accaagtttg tttgcgaant aggttagcaa ctggttccag cccattttac 300

cttgggggcc agttctnctt gncaagaagg ggacaagctt atggtggaac gttcatanca 360

tcntttttgg gtggntttac acaaaagg   388

<210> 13
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> TNF-gamma 5' primer with BamHI restriction site

<400> 13
gcgcggatcc accatgagac gctttttaag caaagtc   37

<210> 14
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> TNF-gamma 3' primer with XbaI restriction site

<400> 14
cgcgtctaga ctatagtaag aaggctccaa agaagg   36

<210> 15
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> TNF-gamma 5' primer with BamHI restriction site

<400> 15
gcgcggatcc accatgagac gctttttaag caaagtc   37

<210> 16
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> TNF-gamma 3' primer with XbaI restriction site

<400> 16
cgcgtctaga ctatagtaag aaggctccaa agaagg   36

<210> 17
<211> 56
<212> DNA
<213> Artificial Sequence

<220>
<223> TNF-gamma 3' primer containing sequences complementary to
Xba I site, translation stop codon, and HA tag

<400> 17
cgctctagat caagcgtagt ctgggacgtc gtatggatag taagaaggct ccaaag   56

<210> 18
<211> 733
<212> DNA
<213> Homo sapiens

<400> 18
gggatccgga gcccaaatct tctgacaaaa ctcacacatg cccaccgtgc ccagcacctg 60

aattcgaggg tgcaccgtca gtcttcctct tccccccaaa acccaaggac accctcatga 120

tctcccggac tcctgaggtc acatgcgtgg tggtggacgt aagccacgaa gaccctgagg 180

tcaagttcaa ctggtacgtg gacggcgtgg aggtgcataa tgccaagaca aagccgcggg 240

aggagcagta caacagcacg taccgtgtgg tcagcgtcct caccgtcctg caccaggact 300

ggctgaatgg caaggagtac aagtgcaagg tctccaacaa agccctccca acccccatcg 360

agaaaaccat ctccaaagcc aaagggcagc ccgagaacc acaggtgtac accctgcccc 420

catcccggga tgagctgacc aagaaccagg tcagcctgac ctgcctggtc aaaggcttct 480

atccaagcga catcgccgtg gagtgggaga gcaatgggca gccggagaac aactacaaga 540

ccacgcctcc cgtgctggac tccgacggct ccttcttcct ctacagcaag ctcaccgtgg 600

acaagagcag gtggcagcag gggaacgtct tctcatgctc cgtgatgcat gaggctctgc 660

acaaccacta cacgcagaag agcctctccc tgtctccggg taaatgagtg cgacggccgc 720

gactctagag gat   733

<210> 19
<211> 1116
<212> DNA
<213> Homo sapiens

<400> 19
atggccgagg atctgggact gagctttggg gaaacagcca gtgtggaaat gctgccagag 60

cacggcagct gcaggcccaa ggccaggagc agcagcgcac gctgggctct cacctgctgc 120

ctggtgttgc tccccttcct tgcaggactc accacatacc tgcttgtcag ccagctccgg 180

gcccagggag aggcctgtgt gcagttccag gctctaaaag acaggagtt tgcaccttca 240

catcagcaag tttatgcacc tcttagagca gacggagata agccaagggc acacctgaca 300

gttgtgagac aaactcccac acagcacttt aaaaatcagt tcccagctct gcactgggaa 360

catgaactag gcctggcctt caccaagaac cgaatgaact ataccaacaa attcctgctg 420

atcccagagt cgggagacta cttcatttac tcccaggtca cattccgtgg gatgacctct 480

gagtgcagtg aaatcagaca agcaggccga ccaaacaagc cagactccat cactgtggtc 540

atcaccaagg taacagacag ctaccctgag ccaacccagc tcctcatggg gaccaagtct 600

gtatgcgaag taggtagcaa ctggttccag cccatctacc tcggagccat gttctccttg 660

caagaagggg acaagctaat ggtgaacgtc agtgacatct ctttggtgga ttacacaaaa 720

gaagataaaa ccttctttgg agccttctta ctataggagg agagcaaata tcattatatg 780

aaagtcctct gccaccgagt tcctaatttt ctttgttcaa atgtaattat aaccagggt 840

tttcttgggg ccgggagtag gggcattcca caggacaac ggtttagcta tgaaatttgg 900

ggcccaaaat ttcacacttc atgtgcctta ctgatgagag tactaactgg aaaaaggctg 960

aagagagcaa atatattatt aagatgggtt ggaggattgg cgagtttcta aatattaaga 1020

cactgatcac taaatgaatg gatgatctac tcgggtcagg attgaaagag aaatatttca 1080

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acaccttcct gctatacaat ggtcaccagt ggtcca                              1116
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<210> 20
<211> 251
<212> PRT
<213> Homo sapiens

<400> 20
Met Ala Glu Asp Leu Gly Leu Ser Phe Gly Glu Thr Ala Ser Val Glu
 1               5                  10                  15

Met Leu Pro Glu His Gly Ser Cys Arg Pro Lys Ala Arg Ser Ser Ser
            20                  25                  30

Ala Arg Trp Ala Leu Thr Cys Cys Leu Val Leu Leu Pro Phe Leu Ala
        35                  40                  45

Gly Leu Thr Thr Tyr Leu Leu Val Ser Gln Leu Arg Ala Gln Gly Glu
    50                  55                  60

Ala Cys Val Gln Phe Gln Ala Leu Lys Gly Gln Glu Phe Ala Pro Ser
65                  70                  75                  80

His Gln Gln Val Tyr Ala Pro Leu Arg Ala Asp Gly Asp Lys Pro Arg
                85                  90                  95

Ala His Leu Thr Val Val Arg Gln Thr Pro Thr Gln His Phe Lys Asn
            100                 105                 110

Gln Phe Pro Ala Leu His Trp Glu His Glu Leu Gly Leu Ala Phe Thr
            115                 120                 125

Lys Asn Arg Met Asn Tyr Thr Asn Lys Phe Leu Leu Ile Pro Glu Ser
        130                 135                 140

Gly Asp Tyr Phe Ile Tyr Ser Gln Val Thr Phe Arg Gly Met Thr Ser
145                 150                 155                 160

Glu Cys Ser Glu Ile Arg Gln Ala Gly Arg Pro Asn Lys Pro Asp Ser
                165                 170                 175

Ile Thr Val Val Ile Thr Lys Val Thr Asp Ser Tyr Pro Glu Pro Thr
                180                 185                 190

Gln Leu Leu Met Gly Thr Lys Ser Val Cys Glu Val Gly Ser Asn Trp
            195                 200                 205

Phe Gln Pro Ile Tyr Leu Gly Ala Met Phe Ser Leu Gln Glu Gly Asp
    210                 215                 220

Lys Leu Met Val Asn Val Ser Asp Ile Ser Leu Val Asp Tyr Thr Lys
225                 230                 235                 240

Glu Asp Lys Thr Phe Phe Gly Ala Phe Leu Leu
                245                 250

<210> 21
<211> 434
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (15)
<223> n equals to a, t, g, or c

<220>
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<221> misc_feature
<222> (19)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (133)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (388)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (424)
<223> n equals to a, t, g, or c

<400> 21
tctacacaag gtacngacng ctaccctgag ccaacccagc tcctcatggg gaccaagtct 60

gtatgcgaag taggtagcaa ctggttccag cccatctacc tcggagccat gttctccttg 120

caagaagggg acnagctaat ggtgaacgtc agtgacatct ctttggtgga ttacacaaaa 180

gaagataaaa ccttctttgg agccttctta ctataggagg agagcaaata tcattatatg 240

aaagtcctct gccaccgagt tcctaatttt ctttgttcaa atgtaattat aaccaggggt 300

tttcttgggg ccgggagtag ggggcattcc cacagggaca acggtttagc tatgaaattt 360

gggggggccca aaatttcaca acttcatngt tgcccttact tgatgagaag tacttaactt 420

gganaaaagg cttg                                                   434

<210> 22
<211> 417
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (4)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (8)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (17)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (24)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (28)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
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<222> (31)..(32)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (35)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (41)..(43)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (46)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (48)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (50)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (53)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (55)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (61)..(63)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (66)..(67)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (202)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (209)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (282)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (306)
<223> n equals to a, t, g, or c

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<220>
<221> misc_feature
<222> (321)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (344)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (346)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (380)..(381)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (395)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (405)
<223> n equals to a, t, g, or c

<400> 22
attncggnac gagcagnggc atgnccgngg nnctnggact nnnctntngn gananagcca   60

nnnttnnaat gctgccagag cacggcagct gcaggcccaa ggccaggagc agcagcgcac  120

gctgggctct cacctgctgc ctggtgttgc tccccttcct tgcaggactc accacatacc  180

tgcttgtcag ccagcttcgg gnccagggng aggcctgtgt gcagttccag ggtctaaaag  240

gacaggagtt tgcaccttca catcagcaag tttatgcacc tnttagagca gacggagata  300

agccangggg acaactgaca nttgtgagac aaattccaca cagnanttta aaatcagttt  360

ccagttttga atggggacan nattaggctg gcttnacaag accgntggat tttacag     417

<210> 23
<211> 388
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (11)..(12)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (46)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (50)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (81)
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<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (138)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (155)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (182)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (188)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (269)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (317)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (322)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (358)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (363)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (375)
<223> n equals to a, t, g, or c

<400> 23
ctgcactggg nncatgaact aggcctggcc ttcaccaaga accgantgan ctataccaac 60

aaattcctgc tgatcccaga ntcgggagac tacttcattt actcccaggt cacattccgt 120

gggaatgaac ctctgaantg ccagtgaaaa tcagncaagc aggccgacca aacaagccag 180

antccatnca ctgtggtcat caccaaggta acagacagct accctgagcc aacccagctc 240

cttcatgggg accaagtttg tttgcgaant aggttagcaa ctggttccag cccattttac 300

cttgggggcc agttctnctt gncaagaagg ggacaagctt atggtggaac gttcatanca 360

tcntttttgg gtggntttac acaaaagg
388

<210> 24

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<211> 458
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (9)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (12)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (119)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (303)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (311)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (387)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (409)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (425)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (427)
<223> n equals to a, t, g, or c

<220>
<221> misc_feature
<222> (453)
<223> n equals to a, t, g, or c
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<400> 24
ggcacagcng gnagtagggg gcattccaca gggacaacgg tttagctatg aaatttgggg 60

cccaaaattt cacacttcat gtgccttact gatgagagta ctaactggaa aaaggctgna 120

agagagcaaa tatattatta agatgggttg gaggattggc gagtttctaa atattaagac 180

actggatcac tgaaatgaat ggatgatcta ctcgggtcca ggattgaaag agaaatattt 240

caacaccttc ctgctataca atggtcacca gtggtccagt tattgttcca atttggatcc 300

atnaatttgc nttcaattcc aggagctttg gaaggaattc caaggaaagc tccaggaaaa 360

ccgtattaaa ctttccaggg gccaaantcc ttcaccaatt ttttccacna actttccagg 420
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cctgncncaa aaaaatggaa agggagttgg tangtccc   458

<210> 25
<211> 546
<212> DNA
<213> Artificial Sequence

<220>
<223> codon optimized form of TNF-gamma-beta

<400> 25
atgctgaaag gtcaagaatt cgcaccgtcc caccagcagg tttacgcacc gctgcgtgca 60

gacggtgata agccgcgtgc acacctgacc gttgtgcgcc agaccccgac ccagcacttc 120

aaaaaccagt tcccggctct gcactgggag cacgaactgg gcctggcctt caccaagaac 180

cgcatgaact acaccaacaa attcctgctg atcccggagt ctggtgacta cttcatctac 240

tcccaggtga ccttccgtgg tatgacctct gagtgctccg aaatccgtca ggcaggccgt 300

ccgaacaagc cggactccat caccgtggtg atcaccaaag tgaccgactc ttacccggag 360

ccgacccagc tgctgatggg taccaagtct gtttgcgaag ttggttccaa ctggttccag 420

ccgatctacc tcggtgccat gttctccctg caagagggcg acaaactgat ggtgaacgtg 480

tccgacatct ctctggtgga ttacaccaag gaagataaaa ccttcttcgg tgccttcctg 540

ctgtaa   546

<210> 26
<211> 181
<212> PRT
<213> Artificial Sequence

<220>
<223> translation product of codon optimized form of
TNF-gamma-beta

<400> 26
Met Leu Lys Gly Gln Glu Phe Ala Pro Ser His Gln Gln Val Tyr Ala
 1   5   10   15

Pro Leu Arg Ala Asp Gly Asp Lys Pro Arg Ala His Leu Thr Val Val
             20   25   30

Arg Gln Thr Pro Thr Gln His Phe Lys Asn Gln Phe Pro Ala Leu His
         35   40   45

Trp Glu His Glu Leu Gly Leu Ala Phe Thr Lys Asn Arg Met Asn Tyr
     50   55   60

Thr Asn Lys Phe Leu Leu Ile Pro Glu Ser Gly Asp Tyr Phe Ile Tyr
 65   70   75   80

Ser Gln Val Thr Phe Arg Gly Met Thr Ser Glu Cys Ser Glu Ile Arg
                 85   90   95

Gln Ala Gly Arg Pro Asn Lys Pro Asp Ser Ile Thr Val Val Ile Thr
             100   105   110

Lys Val Thr Asp Ser Tyr Pro Glu Pro Thr Gln Leu Leu Met Gly Thr
         115   120   125

Lys Ser Val Cys Glu Val Gly Ser Asn Trp Phe Gln Pro Ile Tyr Leu
     130   135   140

Gly Ala Met Phe Ser Leu Gln Glu Gly Asp Lys Leu Met Val Asn Val
145   150   155   160

Ser Asp Ile Ser Leu Val Asp Tyr Thr Lys Glu Asp Lys Thr Phe Phe
            165   170   175

Gly Ala Phe Leu Leu
        180

<210> 27
<211> 182
<212> DNA
<213> Artificial Sequence

<220>
<223> 5' primer to useful for generating 5' half of codon
optimized form of TNF-gamma-beta

<400> 27
ggaattccat atgctgaaag gtcaagaatt cgcaccgtcc caccagcagg tttacgcacc 60

gctgcgtgca gacggtgata agccgcgtgc acacctgacc gttgtgcgcc agaccccgac 120

ccagcacttc aaaaaccagt tcccggctct gcactgggag cacgaactgg gcctggcctt 180

ca   182

<210> 28
<211> 179
<212> DNA
<213> Artificial Sequence

<220>
<223> 3' primer to useful for generating 5' half of codon
optimized form of TNF-gamma-beta

<400> 28
atcaccacgg tgatggagtc cggcttgttc ggacggcctg cctgacggat ttcggagcac 60

tcagaggtca taccacggaa ggtcacctgg gagtagatga agtagtcacc agactccggg 120

atcagcagga atttgttggt gtagttcatg cggttcttgg tgaaggccag gcccagttc 179

<210> 29
<211> 131
<212> DNA
<213> Artificial Sequence

<220>
<223> 5' primer to useful for generating 3' half of codon
optimized form of TNF-gamma-beta

<400> 29
actccatcac cgtggtgatc accaaagtga ccgactctta cccggagccg acccagctgc 60

tgatgggtac caagtctgtt tgcgaagttg gttccaactg gttccagccg atctacctcg 120

gtgccatgtt c   131

<210> 30
<211> 135

<212> DNA
<213> Artificial Sequence

<220>
<223> 3' primer to useful for generating 3' half of codon
optimized form of TNF-gamma-beta

<400> 30
cgctctagat tattacagca ggaaggcacc gaagaaggtt ttatcttcct tggtgtaatc 60

caccagagag atgtcggaca cgttcaccat cagtttgtcg ccctcttgca gggagaacat 120

ggcaccgagg tagat   135